Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-09-03-13** **Date: 05-09-2018**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/92/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-09-2018
Sample ID No	:	2018-09-03-13 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	03-09-2018
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.95	–
2	Finess by Air permeablity method (m^2/kg,Min)	287.5	225m^2/kg, Min
3	Density (gm/cc)	3.15	–
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	160 minutes	Not less than 30 minutes
6	Final Setting time	290 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-09-03-13** **Date: 01-10-2018**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/92/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-09-2018
Sample ID No	:	2018-09-03-13 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	03-09-2018
Environmental Conditions during test	:	Temperature: 26˚C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-09-03-13** **Date: 06-09-2018**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/92/2018-19
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	03-09-2018
Sample ID No	:	2018-09-03-13 /02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-09-2018

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	1215	1215	8.1	91.9	90-100
3	20 mm	5320	6535	43.6	56.4	30-70
4	10 mm	6255	12790	85.3	14.7	10-35
5	4.75 mm	1637	14427	96.2	3.8	0-5
6	Pan	573	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-09-03-13** **Date: 06-09-2018**

Sample ID No : 2018-09-03-13 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.3	
3	Specific Gravity	2.66	_
4	Bulk Density(Loose) (Kg/l)	1.49	_
5	Bulk Density(Compacted) (Kg/l)	1.52	_
6	Water Absorption(%)	0.21	_

Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-09-03-13** **Date: 06-09-2018**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer Reference	:	BBMP/EE/BTP/WO/92/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-09-2018
Sample ID No	:	2018-09-03-13 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	04-09-2018

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	423	423	8.5	91.5	90-100
3	10 mm	2537	2960	59.2	40.8	25-55
4	4.75 mm	1636	4596	91.9	8.1	0-10
5	Pan	404	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-09-03-13** **Date: 06-09-2018**

Sample ID No : 2018-09-03-13 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**13.2**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**12.5**	
3	Specific Gravity	**2.58**	_
4	Bulk Density(Loose) (Kg/l)	**1.52**	_
5	Bulk Density(Compacted) (Kg/l)	**1.58**	_
6	Water Absorption(%)	**0.26**	_
7	Aggregate crushing Value(%)	**24.2**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**22.1**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2018-09-03-13** **Date: 06-09-2018**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.

Agency : Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/92/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 03-09-2018

Sample ID No : 2018-09-03-13 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 04-09-2018

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	25	25	2.5	97.5	90-100	90-100	90-100	95-100
3	2.36 mm	127	152	15.2	84.8	60-95	75-100	85-100	95-100
4	1.18 mm	275	427	42.7	57.3	30-70	55-90	75-100	90-100
5	600 micron	137	564	56.4	43.6	15-34	35-59	60-79	80-100
6	300 micron	189	753	75.3	24.7	5-20	8-30	12-40	15-50
7	150 micron	154	907	90.7	9.3	0-10	0-10	0-10	0-15
8	Pan	93	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2018-09-03-13** **Date: 06-09-2018**

Sample ID No : 2018-09-03-13 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.64	_
2	Specific Gravity	2.58	_
3	Material finer than 75 micron(%)	7.8	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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Format No: CP/TF/2017

TEST REPORT FOR PLASTER SAND

Lab ID	:	**CP-2018-09-03-13**	**Date:**	06-09-2018
Customer	:	Vidyaranyapura Sub Division, BBMP, Bangalore.		
Address	:	Maintenance of Crematoriums and Burial Grounds in Ward No.11(Kuvempunagara) in Vidyaranyapura Sub Division.		
Project Name	:	Executive Engineer, KRIDL,#280, 59th Cross road, 17th C Main road, 3rd Y Block, Rajajinagara, Bangalore-560010		
Agency	:	BBMP/EE/BTP/WO/92/2018-19		
Customer's Reference	:	Sample supplied by Agency		
Source of Sample	:	Sample supplied by Agency		
Sample Condition	:	Satisfactory		
Date of Receipt	:	03-09-2018		
Sample ID No	:	2018-09-03-13/03(b)		
Sample Type	:	PLASTER SAND		
Reference to BIS codes	:	IS: 383 : 2016 (Specification for Coarse and fine Aggregates) IS1542:1992 (Sand for Plaster - Specification) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption		
Date of test	:	04-09-2018		
Total weight taken	:	1000	grams	

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	10 mm	0	0	0	100	100
2	4.75 mm	25	25	2.5	97.5	95-100
3	2.36 mm	22	47	4.7	95.3	95-100
4	1.18 mm	52	99	9.9	90.1	90-100
5	600 micron	96	195	19.5	80.5	80-100
6	300 micron	315	510	51	49	20-65
7	150 micron	410	920	92	8	0-15
8	Pan	80	1000	100	0	---

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EST REPORT OF FINE AGGREGATE

Lab ID : **CP-2018-09-03-13** **Date: 06-09-2018**

Sample ID No : 2018-09-03-13/03(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.8	–
2	Specific Gravity	2.49	–
3	Material finer than 75 micron(%)	7.5	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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